**Virginia Department of Environmental Quality**
**West Central Regional Office**

# FACT SHEET
## FOR PROPOSED PERMITTING ACTION
## UNDER 9 VAC 5 Chapter 80 Article 1 (TITLE V- CLEAN AIR ACT)

**APPLICANT:**

VA-30409 AIRS ID 51-089-0045
VF Imagewear, Inc., Walker Division
P. O. Box 5423
Martinsville, Virginia 24115-5423

**FACILITY LOCATION:**

on Walker Road in Martinsville
UTM Coordinates are ZONE: 17 EASTING: 601.4 km NORTHING: 4056.3 km

**FACILITY DESCRIPTION:**

VF Imagewear, Inc., Walker Division is a manufacturer of knit and fleece textiles covered by Standard Industrial Classification (SIC) Code 2253. This facility receives yarn; knits the fabric; either bleaches and washes the fabric in a sealed vessel (bleach jet) and/or dyes and washes the knit fabric in sealed vessels (pressurized jets); applies fabric softener; dries the fabric; and either cuts the garment pieces and sews the finished garment or ships the fabric to another facility for further processing. The facility has the potential to operate twenty-four (24) hours per day, seven (7) days per week, fifty-two (52) weeks per year.

**COMPLIANCE HISTORY:**

The facility was last inspected on April 10, 2001 and was found to be in compliance with applicable regulations. The plant submitted an annual emission update for calendar year 1998, received March 15, 1999. The facility has made appropriate payment for billed emissions to date.

**EMISSIONS SUMMARY:**

| PLANTWIDE EMISSIONS SUMMARY [TONS PER YEAR] | | |
|---|---|---|
| CRITERIA POLLUTANTS | POTENTIAL EMISSIONS | 1998 ACTUAL EMISSIONS |
| Particulate Matter ($PM_{10}$) | 187.6 note 1 | 1.6 |
| Nitrogen Oxides ($NO_x$) | 313 note 2 | 6.5 |
| Sulfur Dioxide ($SO_2$) | 1660 note 3 | 0 |
| Carbon Monoxide (CO) | 27.6 | 2.3 |
| Volatile Organic Compounds (VOC) | 14.1 | 9.4 |

Note 1 Boiler PM-10 emissions calculated per 9 VAC 5-40-900A at 8,760 hr/yr, assume PM=PM-10
Note 2 Boiler $NO_x$ emissions calculated per SCC 10200401
Note 3 Boiler $SO_2$ emissions calculated per 9 VAC 5-40-930 at 8,760 hr/yr

**TITLE V PROGRAM APPLICABILITY BASIS:**

This facility has the potential to emit 1,660 tons per year of $SO_2$, 313 tons per year of $NO_x$, and 187.6 tons per year of PM-10. Due to this facility's potential to emit over 100 tons per year of these criteria pollutants, VF Imagewear, Inc., Walker Division is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 9 VAC 5 Chapter 80 Article 1.

**LEGAL AND FACTUAL BASIS FOR DRAFT PERMIT CONDITIONS:**

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the Commonwealth of Virginia Federal Operating Permit Regulations for the purposes of Title V of the Federal Clean Air Act (9 VAC 5 Chapter 80 Article 1), and underlying applicable requirements in other state and federal rules. Applicable requirement means all of the following as they apply to emission units in a Title V source:

a. Any standard or other requirement provided for in the State Implementation Plan or the Federal Implementation Plan, including any source-specific provisions such as consent agreements or orders.

b. Any term or condition of any preconstruction permit issued pursuant to 9 VAC 5-80-10, Article 8 (9 VAC 5-80-1700 et seq.) of this part or 9 VAC 5-80-30 or of any operating permit issued pursuant to 9 VAC 5 Chapter 80 Article 5, except for terms or conditions derived from applicable state requirements or from any requirement of these regulations not included in the definition of applicable requirement.

c. Any standard or other requirement prescribed under these regulations, particularly the provisions of 9 VAC 5 Chapter 40 (9 VAC 5-40-10 et seq.), 9 VAC 5 Chapter 50 (9 VAC 5-50-10 et seq.) or 9 VAC 5 Chapter 60 (9 VAC 5-60-10 et seq.), adopted pursuant to requirements of the federal Clean Air Act or under ' 111, 112 or 129 of the federal Clean Air Act.

d. Any requirement concerning accident prevention under ' 112(r)(7) of the federal Clean Air Act.

e. Any compliance monitoring requirements established pursuant to either ' 504(b) or ' 114(a)(3) of the federal Clean Air Act or these regulations.

f. Any standard or other requirement for consumer and commercial products under ' 183(e) of the federal Clean Air Act.

g. Any standard or other requirement for tank vessels under ' 183(f) of the federal Clean Air Act.

h. Any standard or other requirement in 40 CFR Part 55 to control air pollution from outer continental shelf sources.

i. Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI of the federal Clean Air Act, unless the administrator has determined that such requirements need not be contained in a permit issued under this article.

j. With regard to temporary sources subject to 9 VAC 5-80-130, (i) any ambient air quality standard, except applicable state requirements, and (ii) requirements regarding increments or visibility as provided in Article 8 (9 VAC 5-80-1700 et seq.) of this part.

k. Any standard or other requirement of the acid deposition control program under Title IV of the Clean Air Act or the regulations promulgated thereunder.

l. Any standard or other requirement governing solid waste incineration under ' 129 of the Clean Air Act.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 9 VAC 5 Chapter 80 Article 1 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the state but is not federally-enforceable is identified in the draft Title V permit as such.

**MONITORING**

The Babcock and Wilcox (B & W) boiler, B1, was constructed before March 17, 1972, and boiler, B2, was constructed after March 17, 1972, but before August 3, 1979. These two boilers are subject to the particulate and $SO_2$ provisions of 9 VAC 5 Chapter 40, Article 8. Boiler B1 is subject to the 20% and 60% opacity limit per 9 VAC 5-40-940, while boiler B2 is subject to the 20% and 30% opacity per 9 VAC 5-50-80. The 92.56 x $10^6$ Btu/hr (heat input) B & W boiler (Ref. B1) could combust either natural gas or No. 6 fuel oil, and the 49.3 x $10^6$ Btu/hr (heat input) B & W boiler (Ref. B2) is currently configured to combust No. 6 fuel oil, but will be converted to natural gas. VF Imagewear purchases steam from an independent steam producer, and the boilers are currently off-line. VF Imagewear has agreed to combust Natural Gas only and that is the only fuel allowed by the Title V permit.

The pound per million Btu particulate emission limit for these boilers are calculated per the equation in 9 VAC 5-40-900(A)(1):

PM $= 1.0906 \times K^{(-0.2594)} = 1.0906 \times (92.56 + 49.3)^{-0.2594} = 0.302$ lb per $10^6$ Btu
where K is the sum of the total heat input capacity of all existing boilers in $10^6$ Btu/hour

Monthly records of the consumption of natural gas in the B & W boiler (Ref. B1), the consumption of Natural Gas in the B & W boiler (Ref. B2), and AP42 fuel burning emission factors will be used to demonstrate compliance with the 2.64 lb per million Btu $SO_2$ limit and 0.30 lb per million Btu (lb/MM Btu)

particulate limit per 9 VAC 5 Chapter 40, Article 8. The particulate emission calculations demonstration for these boilers are as follows:

$$\underline{\text{No. 6 fuel oil}}\ \underline{9.19*2.50(\%\,S)\ \text{lb PM}}\ \Big)\ \underline{150{,}000\ \text{Btu/gal} \times 1000\ \text{gal}} = \underline{0.152\ \text{lb PM}}$$
(SCC 10300402) 1,000,000 Btu 1,000,000 Btu
*assume 150,000 btu/gal*

$$\underline{\text{natural gas}}\ \underline{7.6\ \text{lb PM}}\ \Big)\ \underline{1{,}000\ \text{Btu/Ft}^3 \times 1{,}000{,}000\ \text{Ft}^3} = \underline{0.0076\ \text{lb PM}}$$
(SCC 10300602) 1,000,000 Btu 1,000,000 Btu
*assume 1,000 btu/*$\text{Ft}^3$

These calculations indicates that these boilers could potentially emit a maximum of 0.152 lb/MM Btu of PM per AP-42 guidelines, which demonstrates compliance with the 0.302 lb/MM Btu limit. The calculations demonstrate that these boilers do not exceed the allowable emission limitation and no further periodic monitoring for particulate emissions should be required. The permit limits the allowed fuel to Natural Gas only. Restricting the fuel to Natural Gas serves to further reduce the maximum particulate emissions.

The sulfur dioxide emission calculations demonstration for these boilers are as follows:

$$\underline{\text{No. 6 fuel oil}}\ \underline{157 \times 2.50(\%\,S)}\ \Big)\ \underline{150{,}000\ \text{Btu/gal} \times 1000\ \text{gal}} = \underline{2.62\ \text{lb } SO_2}$$
(SCC 10300402) 1,000,000 Btu 1,000,000 Btu
*assume 150,000 btu/gal*

$$\underline{\text{natural gas}}\ \underline{0.6\ \text{lb } SO_2}\ \Big)\ \underline{1{,}000\ \text{Btu/Ft}^3 \times 1{,}000{,}000\ \text{Ft}^3} = \underline{0.0006\ \text{lb } SO_2}$$
(SCC 10300602) 1,000,000 Btu 1,000,000 Btu
*assume 1,000 btu/*$\text{Ft}^3$

These calculations indicate that these boilers could potentially emit a maximum of 2.62 lb/MM Btu of $SO_2$ while burning No. 6 fuel oil with a maximum sulfur content of 2.5% (by weight) per AP-42 guidelines, which demonstrates compliance with the 2.64 lb/MM Btu limit. The permit limits the allowed fuel to Natural Gas only. Restricting the fuel to Natural Gas serves to further reduce the maximum sulfur emissions. The permittee will keep records of fuel combusted in each boiler, calculated monthly as the sum of each 12-month period, and will conduct a weekly visible emission observation (see Periodic Monitoring).

**PERIODIC MONITORING**

Monitoring of opacity will require the source to at least one time per week, when the boiler(s) are operating, observe for the presence of visible emissions from the common boiler stack. If visible emissions are observed, the permittee will have the option to take timely corrective action to resume operations without visible emissions or perform a VEE in accordance with 40 CFR 60, Appendix A, Method 9 to assure visible emission compliance. The permittee will keep a log of observations, any VEE recordings and any corrective actions. If the boiler(s) have not operated for any period during the week, this fact shall be noted in the log, and the visible emission observation was not required.

**REQUEST FOR VARIANCES OR ALTERNATIVES:**

None

**COMMENT PERIOD:**

The public notice appeared in the Martinsville Bulletin on March 28, 2000.
Beginning Date: March 28, 2000
Ending Date: April 27, 2000

Only EPA submitted comments. Those comments were addressed and the proposed permit forwarded to EPA on August 13, 2001. The EPA 45 day review period ends September 27, 2001.